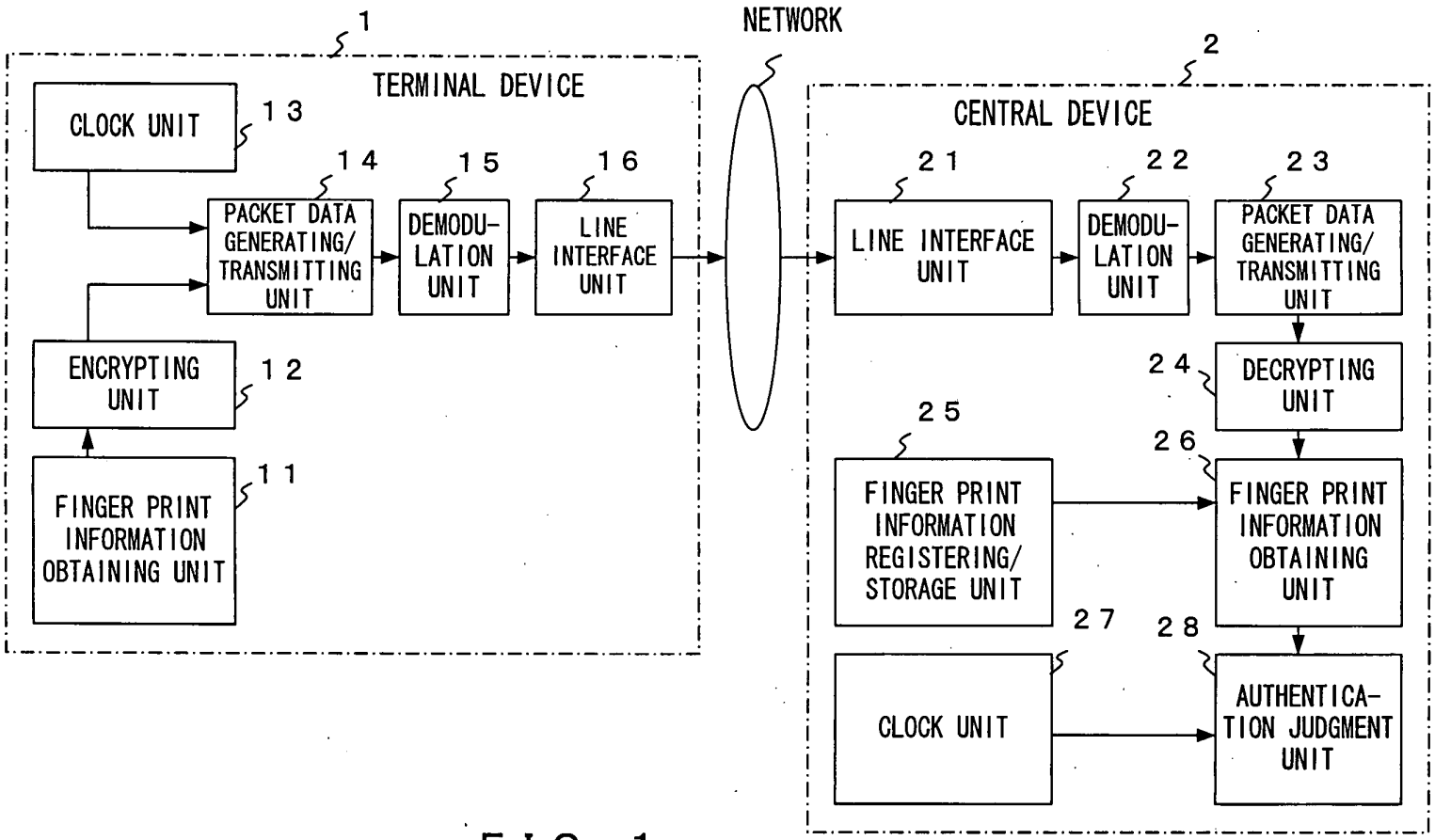

1
TERMINAL DEVICE
CLOCK UNIT
13
14
15
16
PACKET DATA GENERATING/ TRANSMITTING UNIT
DEMODU-LATION UNIT
LINE INTERFACE UNIT
ENCRYPTING UNIT
12
FINGER PRINT INFORMATION OBTAINING UNIT
11
NETWORK
2
CENTRAL DEVICE
21
22
23
LINE INTERFACE UNIT
DEMODU-LATION UNIT
PACKET DATA GENERATING/ TRANSMITTING UNIT
24
DECRYPTING UNIT
25
26
FINGER PRINT INFORMATION REGISTERING/ STORAGE UNIT
FINGER PRINT INFORMATION OBTAINING UNIT
27
28
CLOCK UNIT
AUTHENTICA-TION JUDGMENT UNIT

FIG. 1

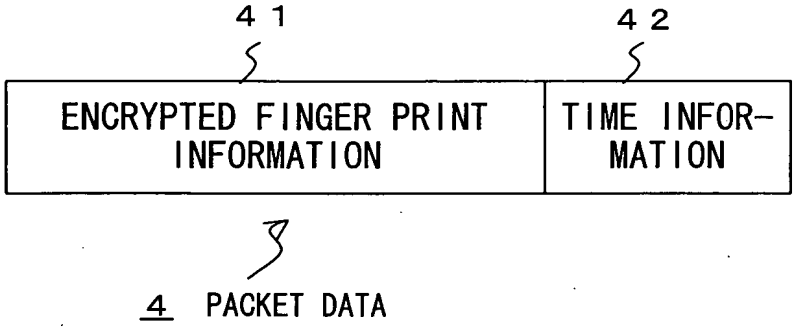

41
42
ENCRYPTED FINGER PRINT INFORMATION
TIME INFOR-MATION
4 PACKET DATA

FIG. 2

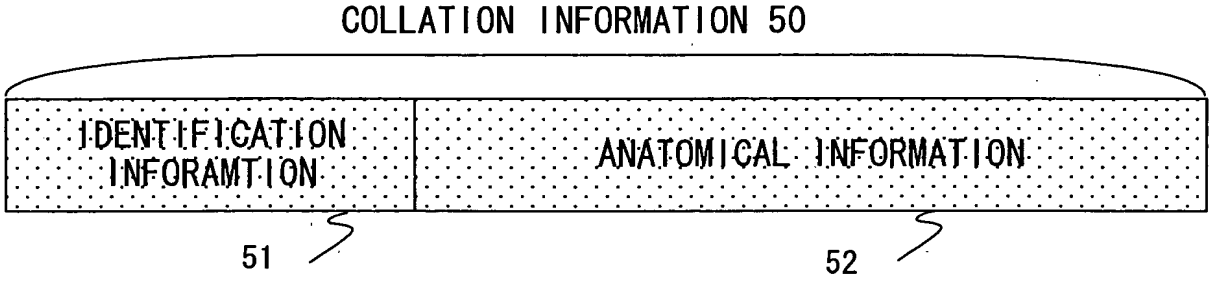
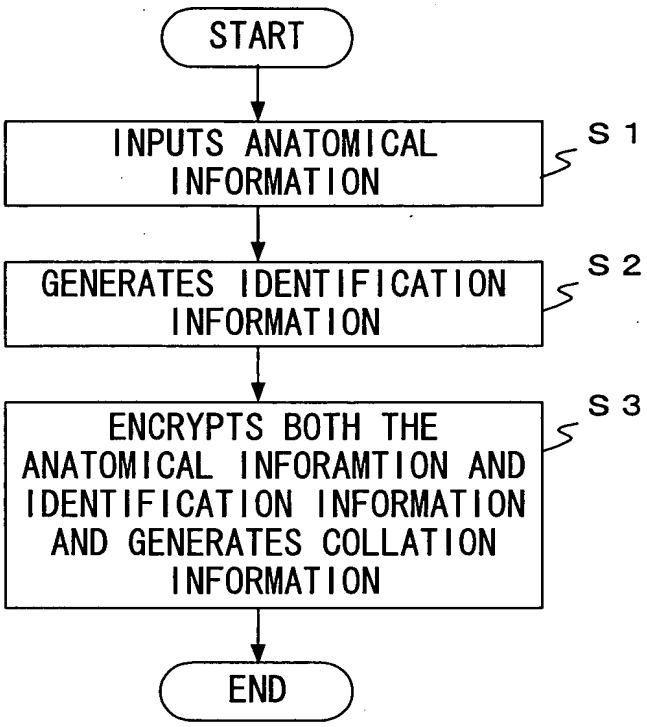

COLLATION INFORMATION 50
IDENTIFICATION INFORAMTION
ANATOMICAL INFORMATION
51
52

FIG. 3


START
INPUTS ANATOMICAL INFORMATION
S 1
GENERATES IDENTIFICATION INFORMATION
S 2
ENCRYPTS BOTH THE ANATOMICAL INFORAMTION AND IDENTIFICATION INFORMATION AND GENERATES COLLATION INFORMATION
S 3
END

F I G. 4

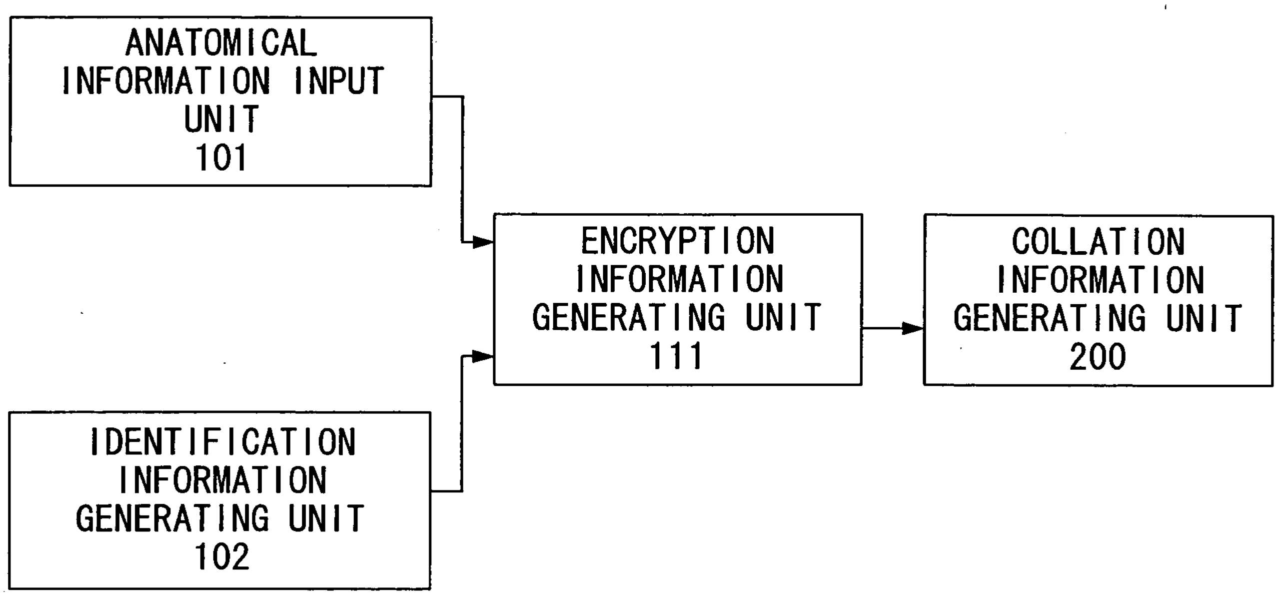

ANATOMICAL INFORMATION INPUT UNIT
101
IDENTIFICATION INFORMATION GENERATING UNIT
102
ENCRYPTION INFORMATION GENERATING UNIT
111
COLLATION INFORMATION GENERATING UNIT
200

FIG. 5

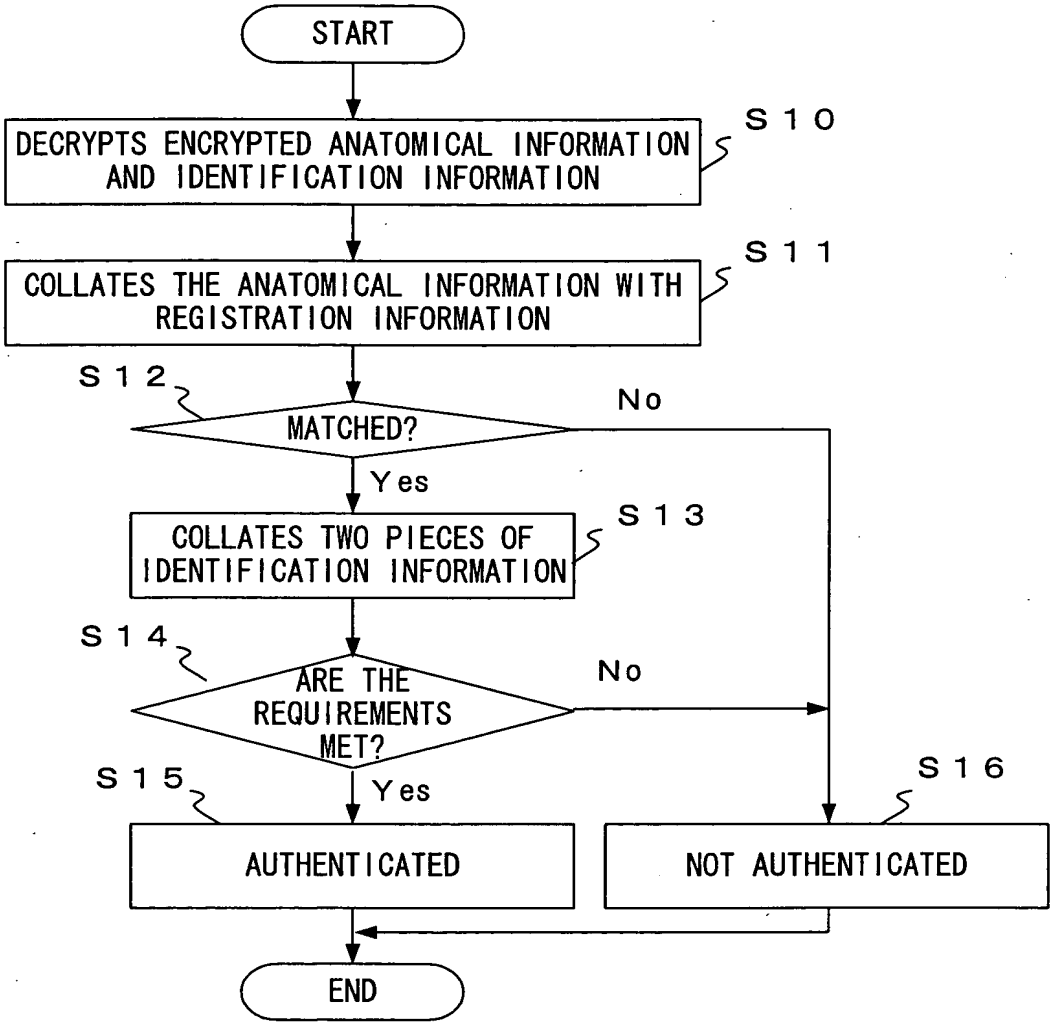

START
DECRYPTS ENCRYPTED ANATOMICAL INFORMATION AND IDENTIFICATION INFORMATION
S10
COLLATES THE ANATOMICAL INFORMATION WITH REGISTRATION INFORMATION
S11
S12
MATCHED?
No
Yes
COLLATES TWO PIECES OF IDENTIFICATION INFORMATION
S13
S14
ARE THE REQUIREMENTS MET?
No
S15
Yes
S16
AUTHENTICATED
NOT AUTHENTICATED
END

FIG. 6

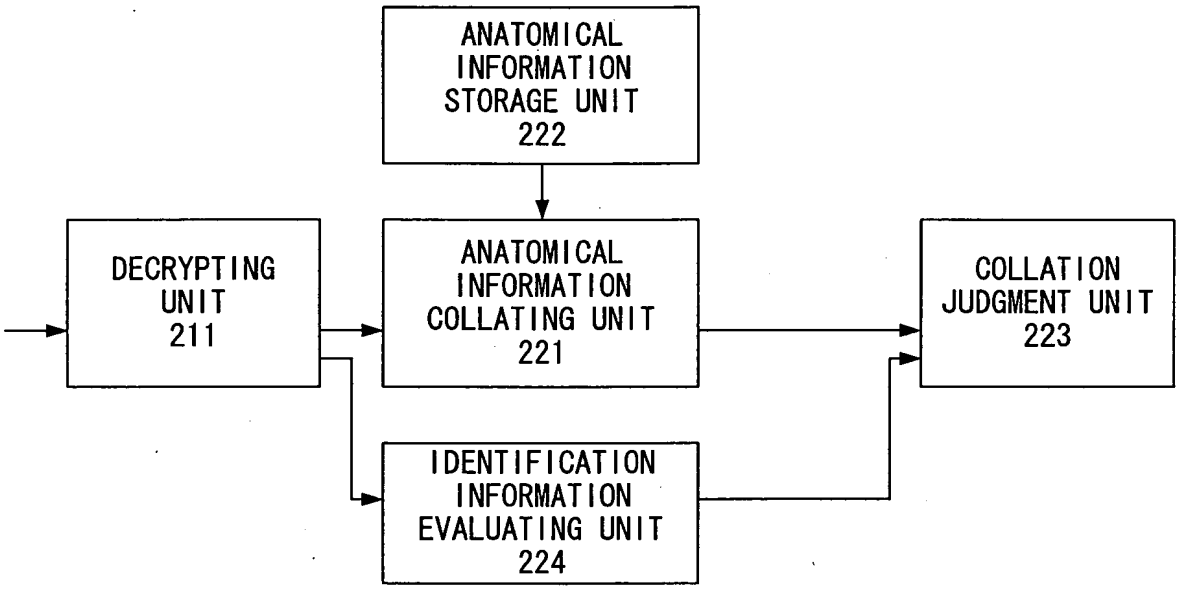

ANATOMICAL INFORMATION STORAGE UNIT 222
DECRYPTING UNIT 211
ANATOMICAL INFORMATION COLLATING UNIT 221
COLLATION JUDGMENT UNIT 223
IDENTIFICATION INFORMATION EVALUATING UNIT 224

FIG. 7

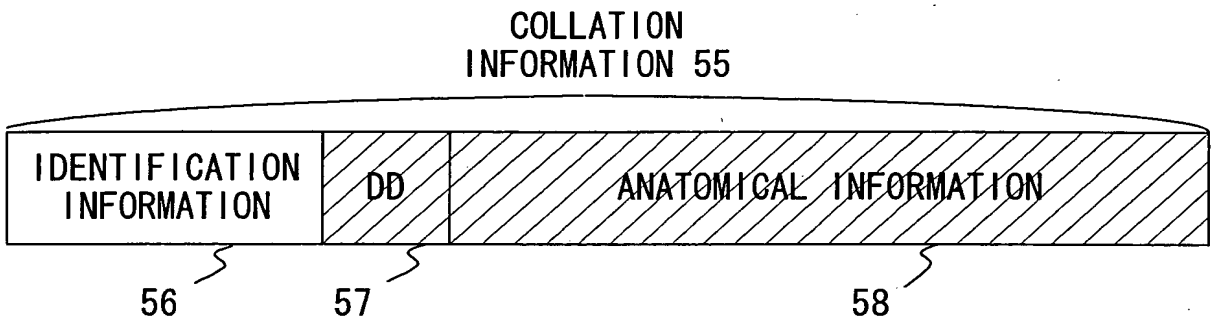

COLLATION
INFORMATION 55
IDENTIFICATION
INFORMATION
DD
ANATOMICAL INFORMATION
56
57
58

FIG. 8

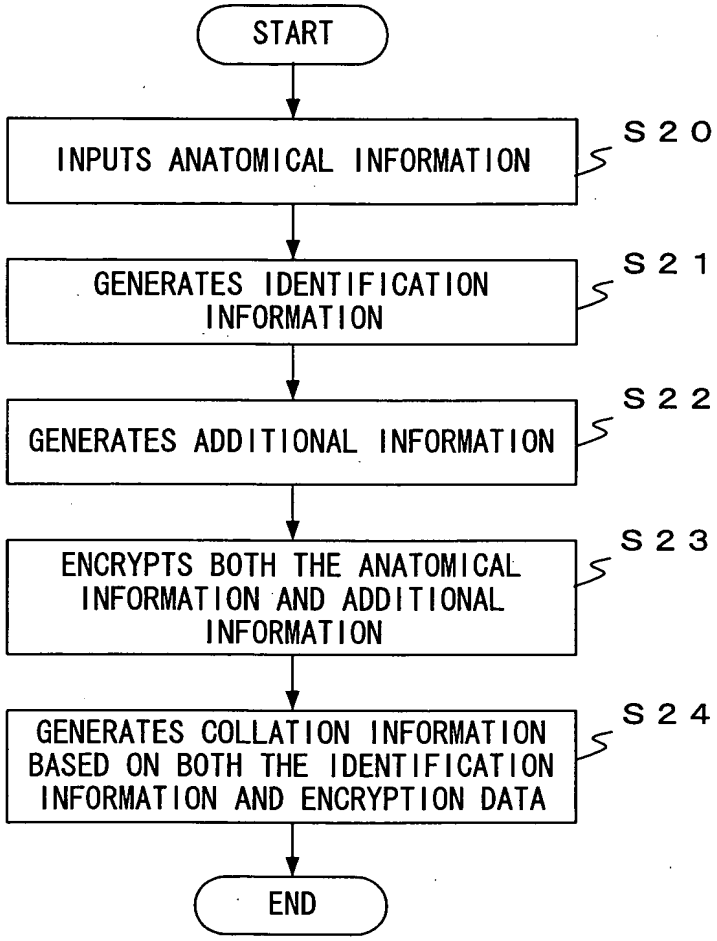

START
INPUTS ANATOMICAL INFORMATION
S20
GENERATES IDENTIFICATION INFORMATION
S21
GENERATES ADDITIONAL INFORMATION
S22
ENCRYPTS BOTH THE ANATOMICAL INFORMATION AND ADDITIONAL INFORMATION
S23
GENERATES COLLATION INFORMATION BASED ON BOTH THE IDENTIFICATION INFORMATION AND ENCRYPTION DATA
S24
END

FIG. 9

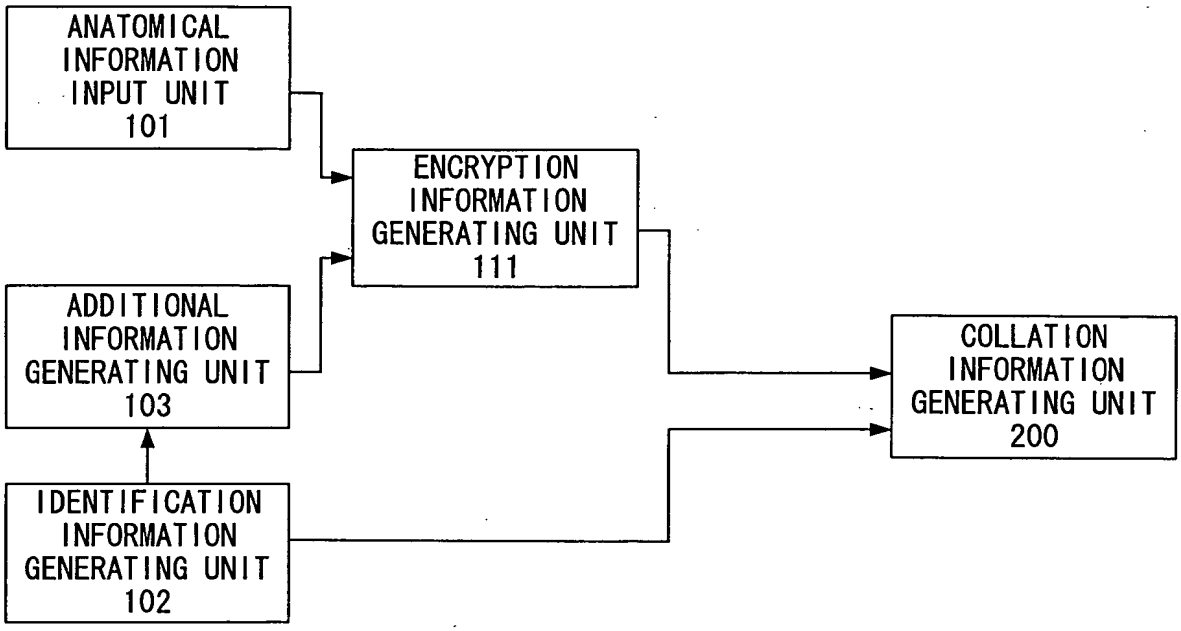

ANATOMICAL INFORMATION INPUT UNIT 101
ENCRYPTION INFORMATION GENERATING UNIT 111
ADDITIONAL INFORMATION GENERATING UNIT 103
COLLATION INFORMATION GENERATING UNIT 200
IDENTIFICATION INFORMATION GENERATING UNIT 102

FIG. 10

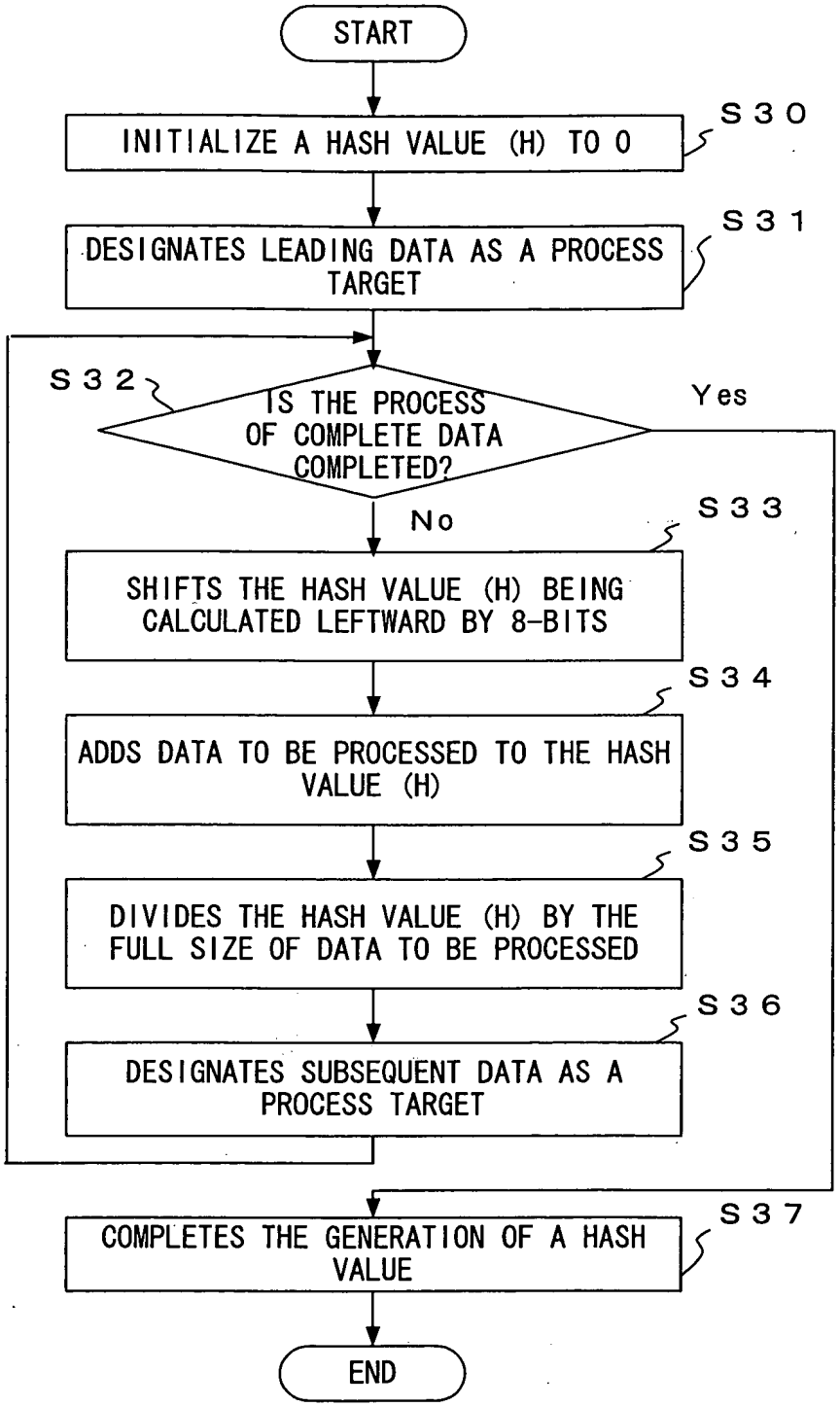

START
INITIALIZE A HASH VALUE (H) TO 0
S30
DESIGNATES LEADING DATA AS A PROCESS TARGET
S31
S32
IS THE PROCESS OF COMPLETE DATA COMPLETED?
Yes
No
S33
SHIFTS THE HASH VALUE (H) BEING CALCULATED LEFTWARD BY 8-BITS
S34
ADDS DATA TO BE PROCESSED TO THE HASH VALUE (H)
S35
DIVIDES THE HASH VALUE (H) BY THE FULL SIZE OF DATA TO BE PROCESSED
S36
DESIGNATES SUBSEQUENT DATA AS A PROCESS TARGET
COMPLETES THE GENERATION OF A HASH VALUE
S37
END

FIG. 11

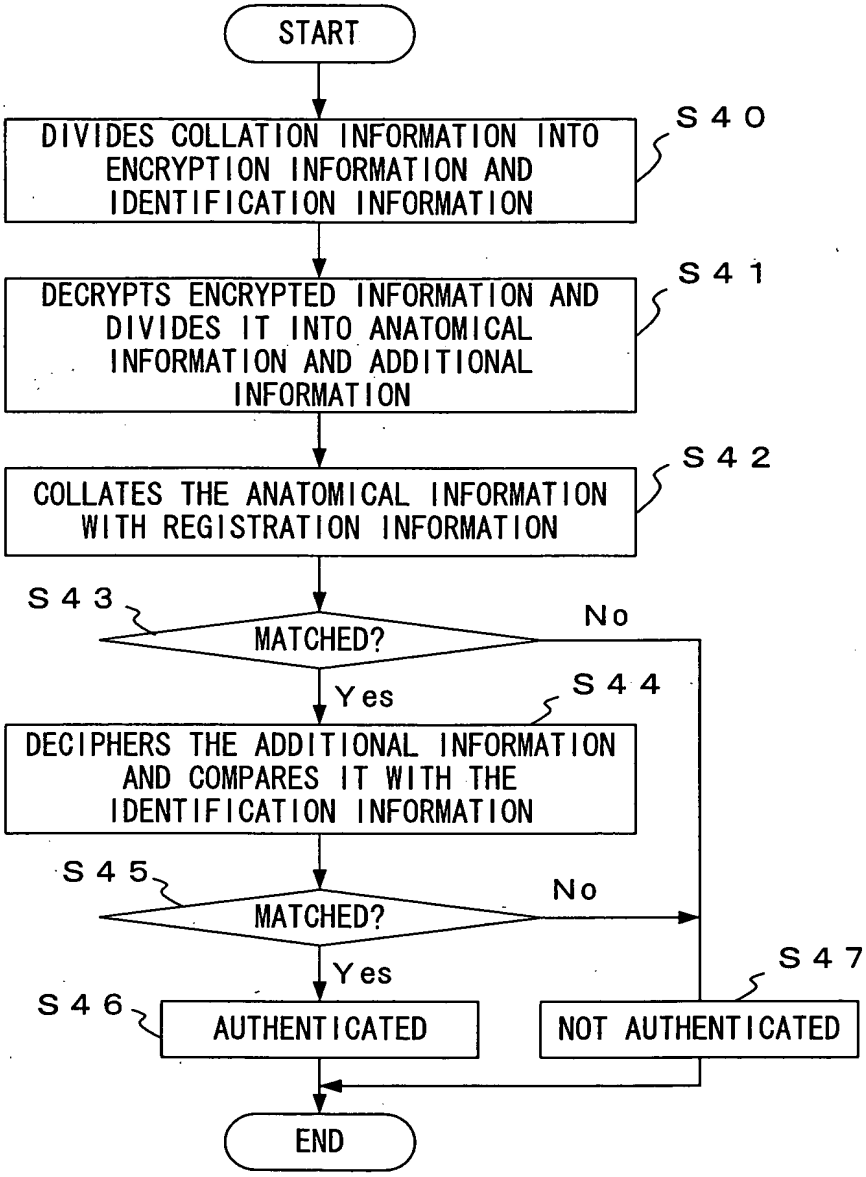

START
DIVIDES COLLATION INFORMATION INTO ENCRYPTION INFORMATION AND IDENTIFICATION INFORMATION
S40
DECRYPTS ENCRYPTED INFORMATION AND DIVIDES IT INTO ANATOMICAL INFORMATION AND ADDITIONAL INFORMATION
S41
COLLATES THE ANATOMICAL INFORMATION WITH REGISTRATION INFORMATION
S42
S43
MATCHED?
No
Yes
S44
DECIPHERS THE ADDITIONAL INFORMATION AND COMPARES IT WITH THE IDENTIFICATION INFORMATION
S45
MATCHED?
No
Yes
S46
AUTHENTICATED
S47
NOT AUTHENTICATED
END

FIG. 12

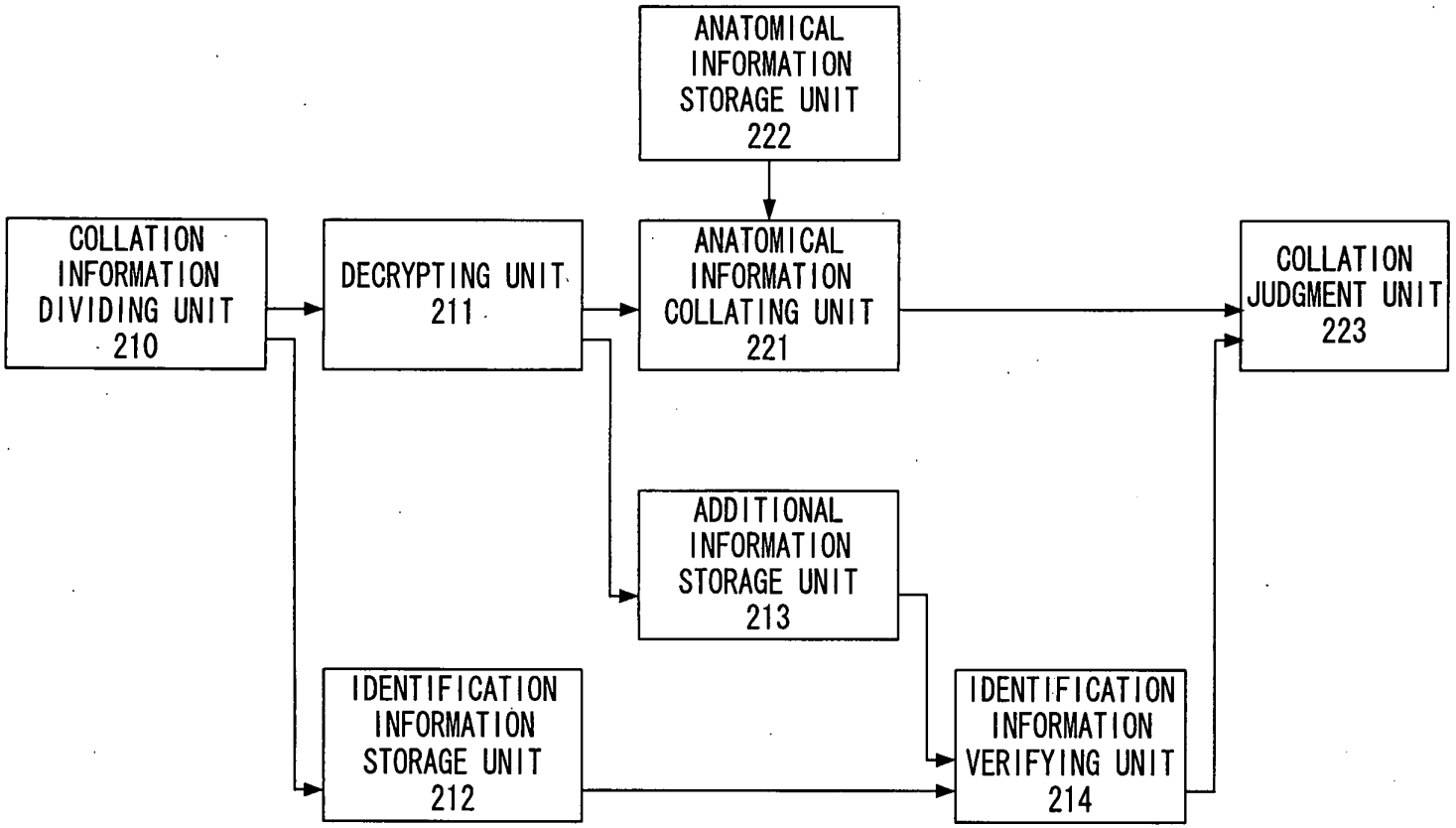

ANATOMICAL INFORMATION STORAGE UNIT 222
COLLATION INFORMATION DIVIDING UNIT 210
DECRYPTING UNIT 211
ANATOMICAL INFORMATION COLLATING UNIT 221
COLLATION JUDGMENT UNIT 223
ADDITIONAL INFORMATION STORAGE UNIT 213
IDENTIFICATION INFORMATION STORAGE UNIT 212
IDENTIFICATION INFORMATION VERIFYING UNIT 214

FIG. 13

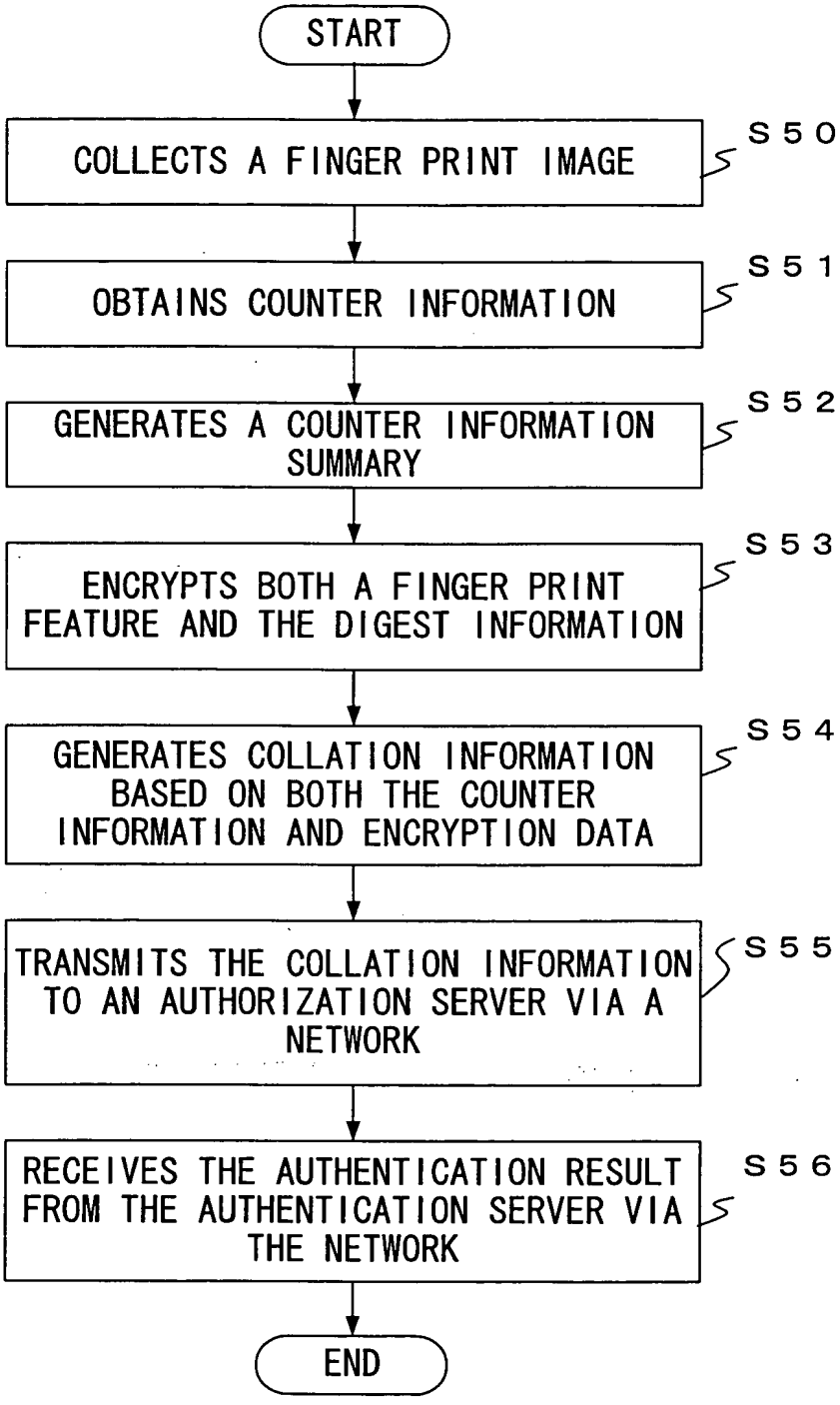

START
COLLECTS A FINGER PRINT IMAGE
S50
OBTAINS COUNTER INFORMATION
S51
GENERATES A COUNTER INFORMATION SUMMARY
S52
ENCRYPTS BOTH A FINGER PRINT FEATURE AND THE DIGEST INFORMATION
S53
GENERATES COLLATION INFORMATION BASED ON BOTH THE COUNTER INFORMATION AND ENCRYPTION DATA
S54
TRANSMITS THE COLLATION INFORMATION TO AN AUTHORIZATION SERVER VIA A NETWORK
S55
RECEIVES THE AUTHENTICATION RESULT FROM THE AUTHENTICATION SERVER VIA THE NETWORK
S56
END

FIG. 14

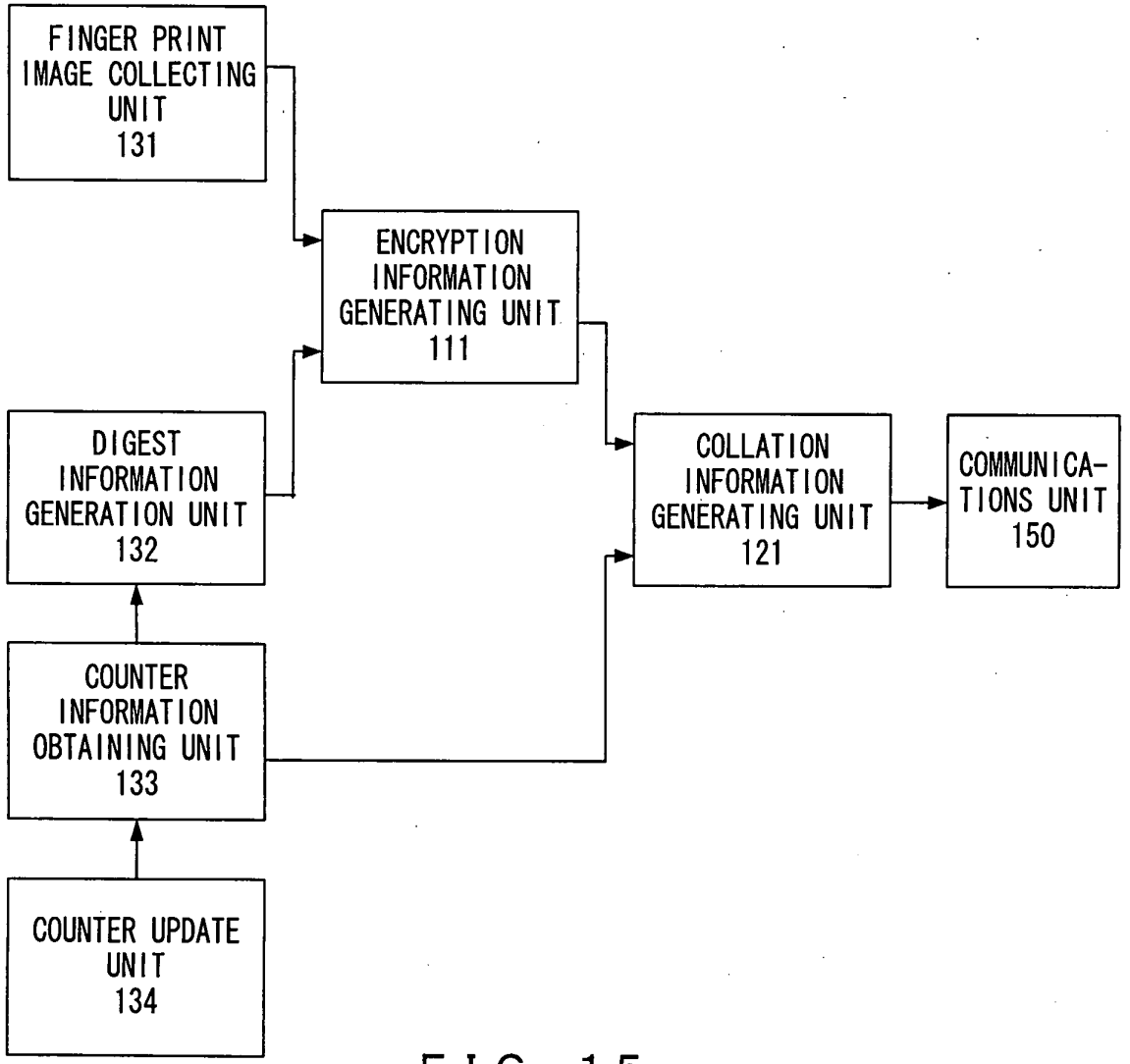

FINGER PRINT IMAGE COLLECTING UNIT 131
ENCRYPTION INFORMATION GENERATING UNIT 111
DIGEST INFORMATION GENERATION UNIT 132
COLLATION INFORMATION GENERATING UNIT 121
COMMUNICA-TIONS UNIT 150
COUNTER INFORMATION OBTAINING UNIT 133
COUNTER UPDATE UNIT 134

FIG. 15

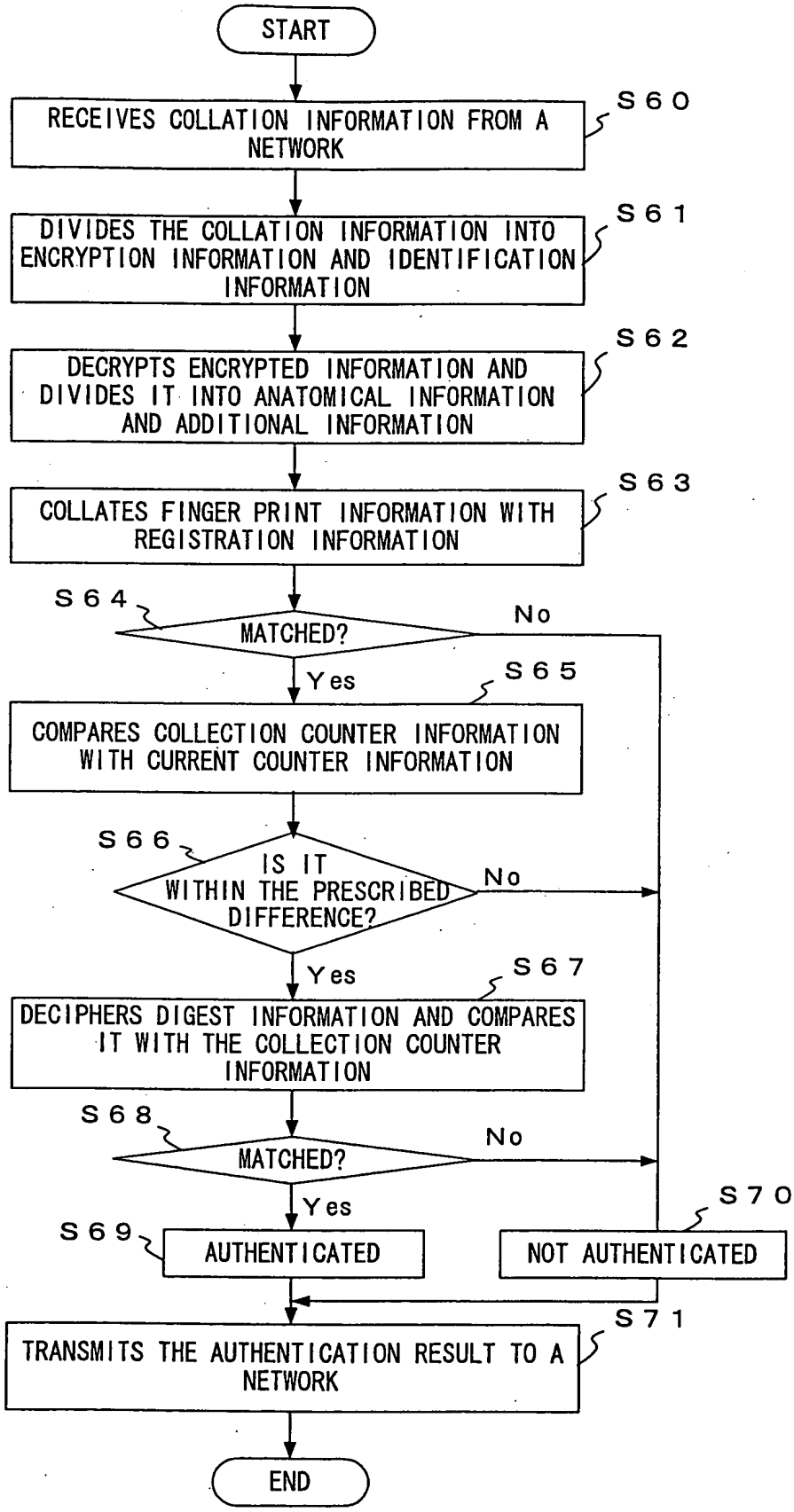

START
RECEIVES COLLATION INFORMATION FROM A NETWORK
S60
DIVIDES THE COLLATION INFORMATION INTO ENCRYPTION INFORMATION AND IDENTIFICATION INFORMATION
S61
DECRYPTS ENCRYPTED INFORMATION AND DIVIDES IT INTO ANATOMICAL INFORMATION AND ADDITIONAL INFORMATION
S62
COLLATES FINGER PRINT INFORMATION WITH REGISTRATION INFORMATION
S63
S64
MATCHED?
No
Yes
S65
COMPARES COLLECTION COUNTER INFORMATION WITH CURRENT COUNTER INFORMATION
S66
IS IT WITHIN THE PRESCRIBED DIFFERENCE?
No
Yes
S67
DECIPHERS DIGEST INFORMATION AND COMPARES IT WITH THE COLLECTION COUNTER INFORMATION
S68
MATCHED?
No
Yes
S69
AUTHENTICATED
S70
NOT AUTHENTICATED
S71
TRANSMITS THE AUTHENTICATION RESULT TO A NETWORK
END

FIG. 16

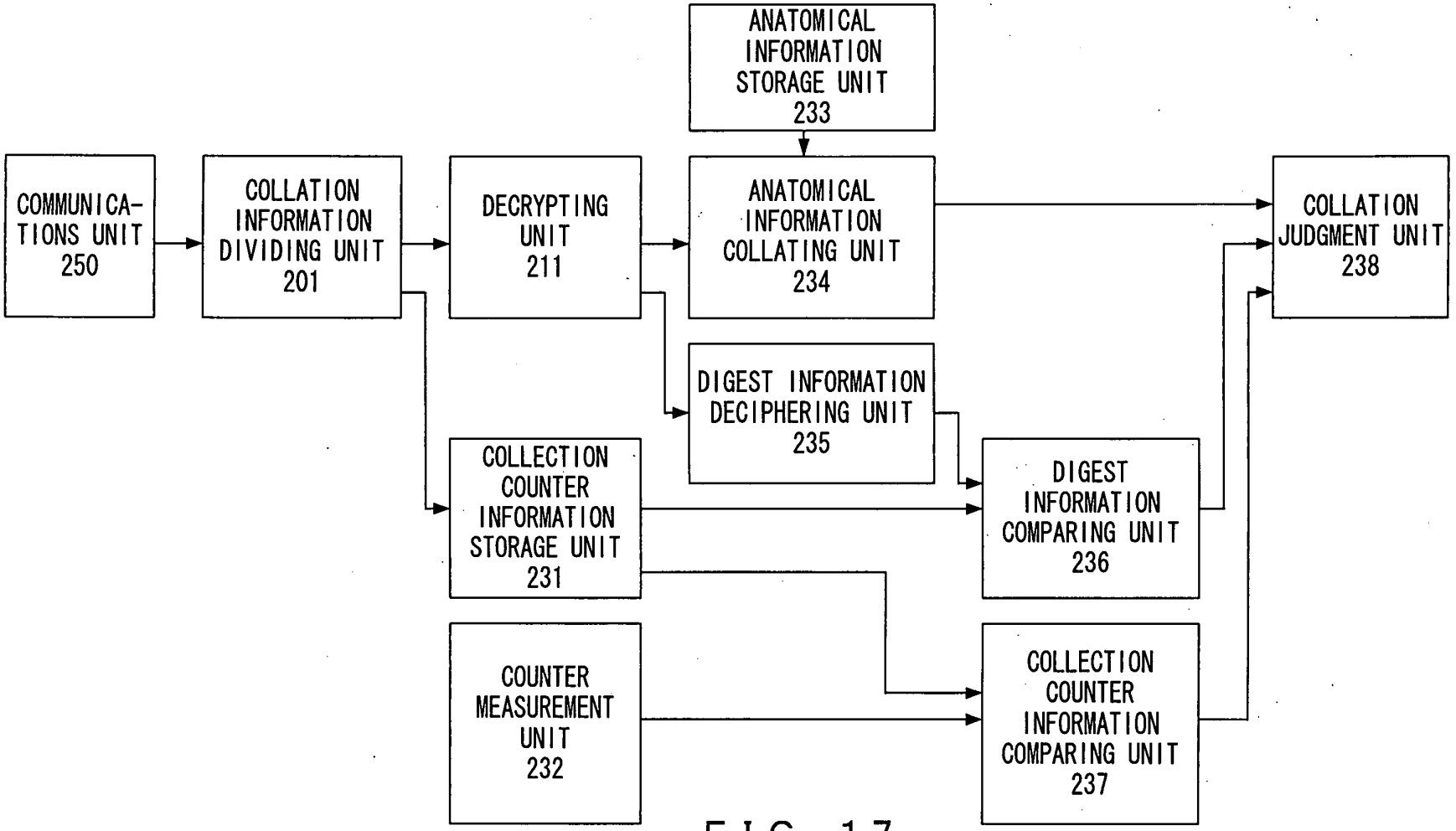

ANATOMICAL INFORMATION STORAGE UNIT 233
COMMUNICATIONS UNIT 250
COLLATION INFORMATION DIVIDING UNIT 201
DECRYPTING UNIT 211
ANATOMICAL INFORMATION COLLATING UNIT 234
COLLATION JUDGMENT UNIT 238
DIGEST INFORMATION DECIPHERING UNIT 235
COLLECTION COUNTER INFORMATION STORAGE UNIT 231
DIGEST INFORMATION COMPARING UNIT 236
COUNTER MEASUREMENT UNIT 232
COLLECTION COUNTER INFORMATION COMPARING UNIT 237

FIG. 17

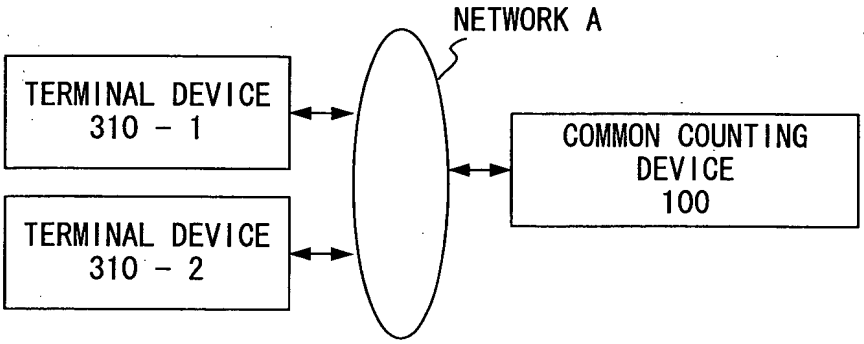
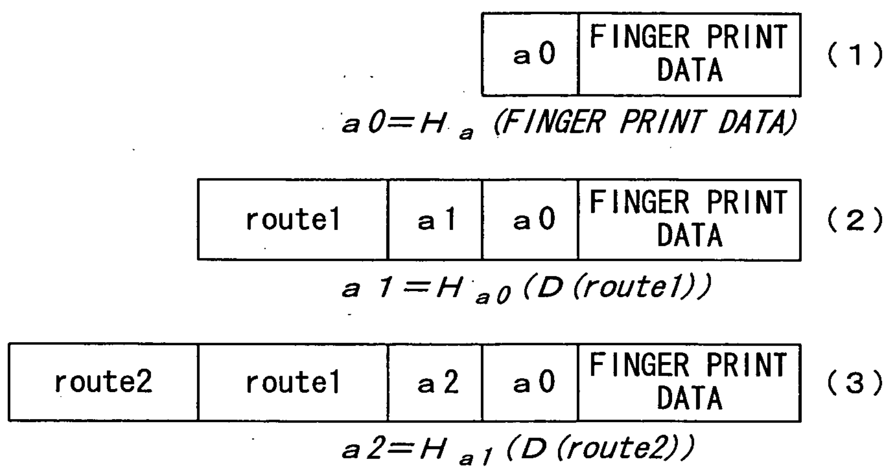


FIG. 18



Ha(x) : ONE-DIRECTION MAPPING VALUE (HASH VALUE) OF x CONCERNING PARAMETER a

D(x) : DIGEST INFORMATION (HASH VALUE) OF x

FIG. 19

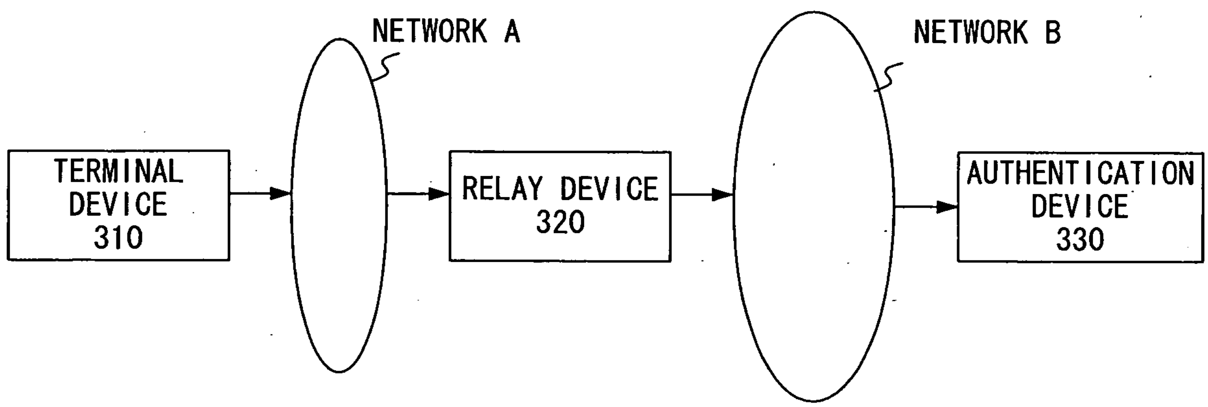

NETWORK A
NETWORK B
TERMINAL DEVICE 310
RELAY DEVICE 320
AUTHENTICATION DEVICE 330

FIG. 20

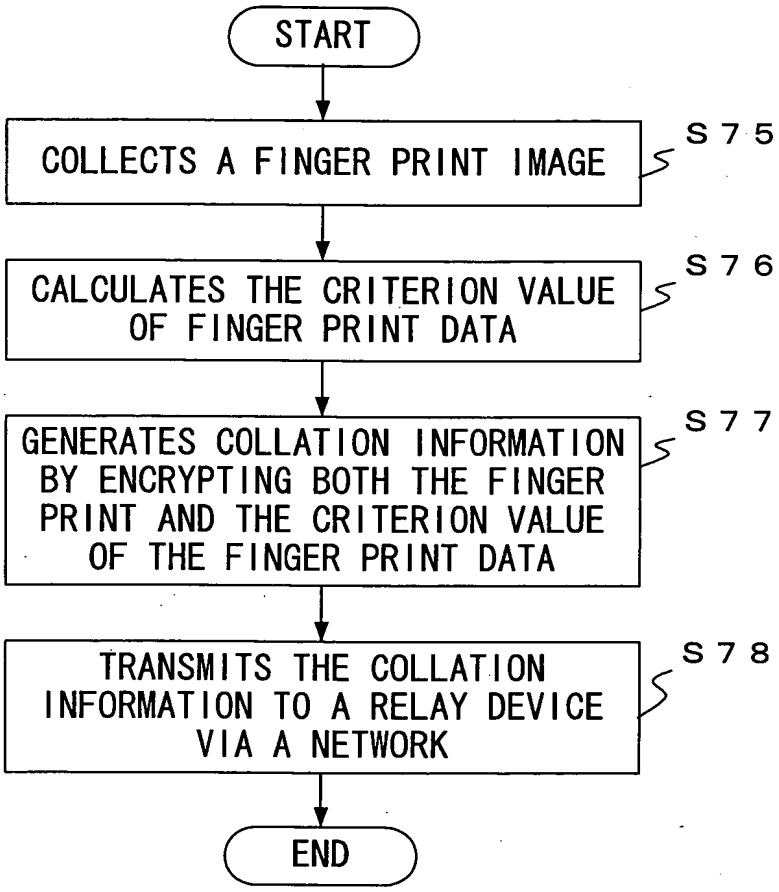

START
COLLECTS A FINGER PRINT IMAGE
S75
CALCULATES THE CRITERION VALUE OF FINGER PRINT DATA
S76
GENERATES COLLATION INFORMATION BY ENCRYPTING BOTH THE FINGER PRINT AND THE CRITERION VALUE OF THE FINGER PRINT DATA
S77
TRANSMITS THE COLLATION INFORMATION TO A RELAY DEVICE VIA A NETWORK
S78
END

FIG. 21

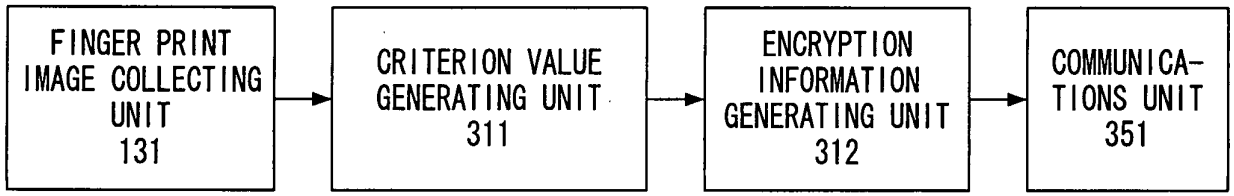

FINGER PRINT IMAGE COLLECTING UNIT 131
CRITERION VALUE GENERATING UNIT 311
ENCRYPTION INFORMATION GENERATING UNIT 312
COMMUNICA-TIONS UNIT 351

FIG. 22

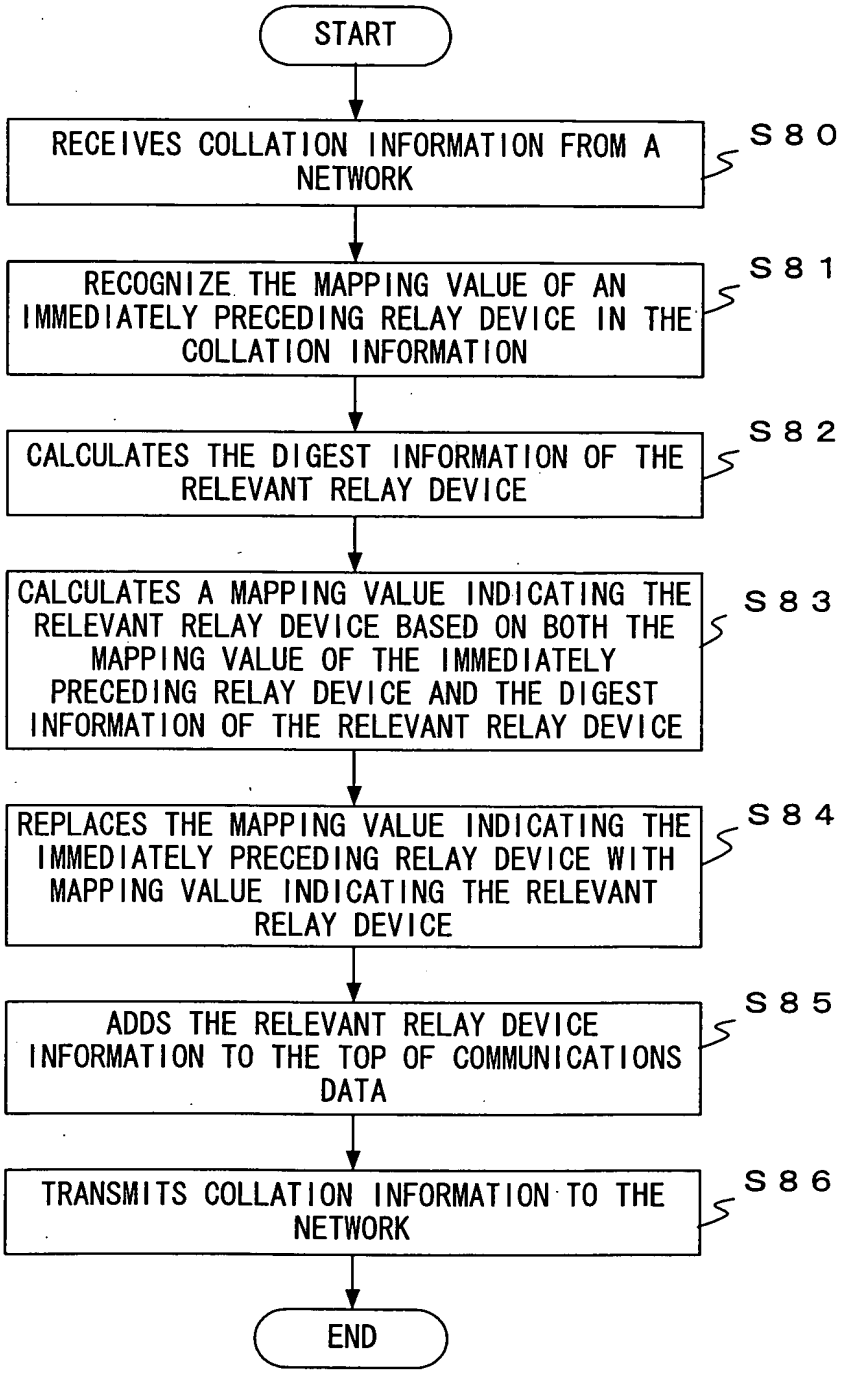

START
RECEIVES COLLATION INFORMATION FROM A NETWORK
S80
RECOGNIZE THE MAPPING VALUE OF AN IMMEDIATELY PRECEDING RELAY DEVICE IN THE COLLATION INFORMATION
S81
CALCULATES THE DIGEST INFORMATION OF THE RELEVANT RELAY DEVICE
S82
CALCULATES A MAPPING VALUE INDICATING THE RELEVANT RELAY DEVICE BASED ON BOTH THE MAPPING VALUE OF THE IMMEDIATELY PRECEDING RELAY DEVICE AND THE DIGEST INFORMATION OF THE RELEVANT RELAY DEVICE
S83
REPLACES THE MAPPING VALUE INDICATING THE IMMEDIATELY PRECEDING RELAY DEVICE WITH MAPPING VALUE INDICATING THE RELEVANT RELAY DEVICE
S84
ADDS THE RELEVANT RELAY DEVICE INFORMATION TO THE TOP OF COMMUNICATIONS DATA
S85
TRANSMITS COLLATION INFORMATION TO THE NETWORK
S86
END

FIG. 23

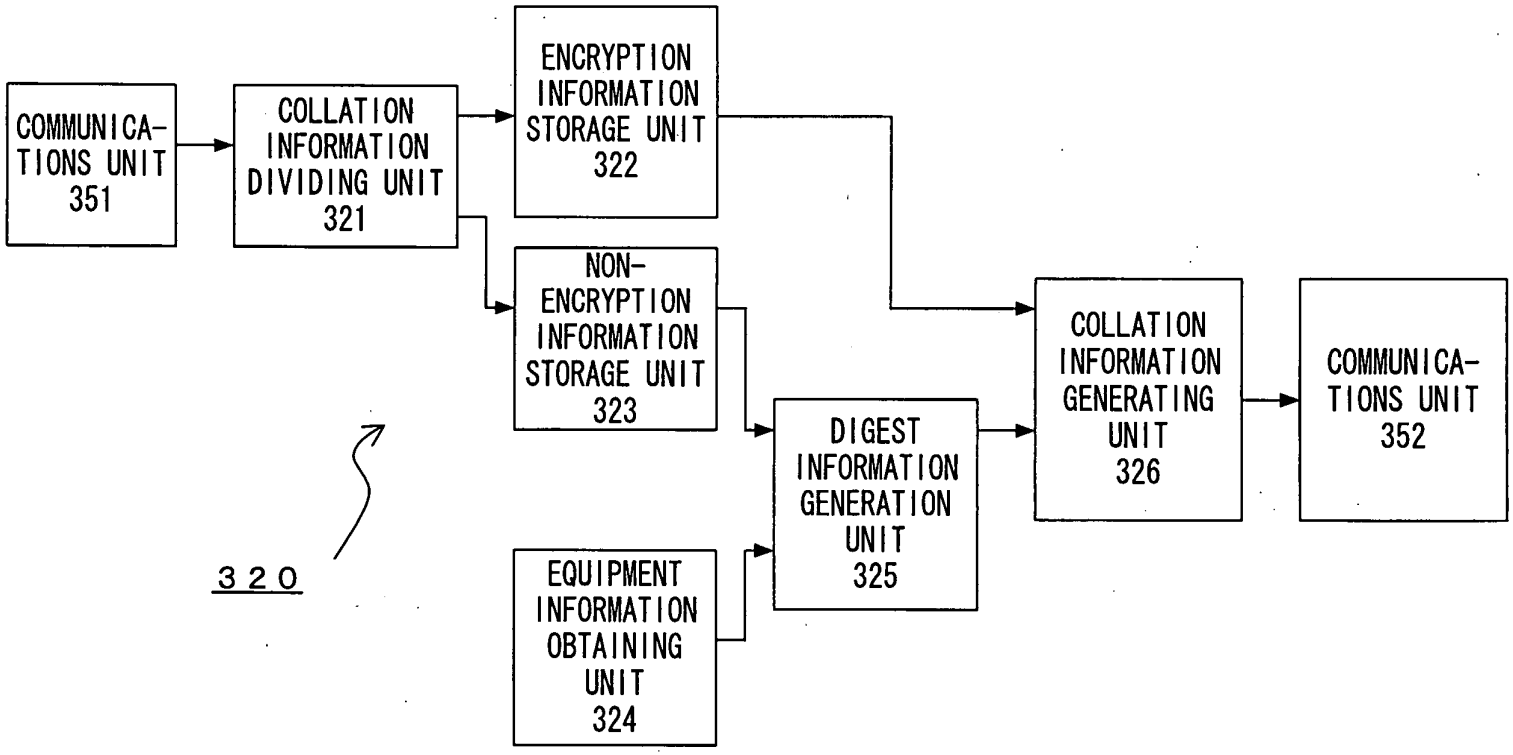

COMMUNICA-
TIONS UNIT
351
COLLATION
INFORMATION
DIVIDING UNIT
321
ENCRYPTION
INFORMATION
STORAGE UNIT
322
NON-
ENCRYPTION
INFORMATION
STORAGE UNIT
323
320
EQUIPMENT
INFORMATION
OBTAINING
UNIT
324
DIGEST
INFORMATION
GENERATION
UNIT
325
COLLATION
INFORMATION
GENERATING
UNIT
326
COMMUNICA-
TIONS UNIT
352

FIG. 24

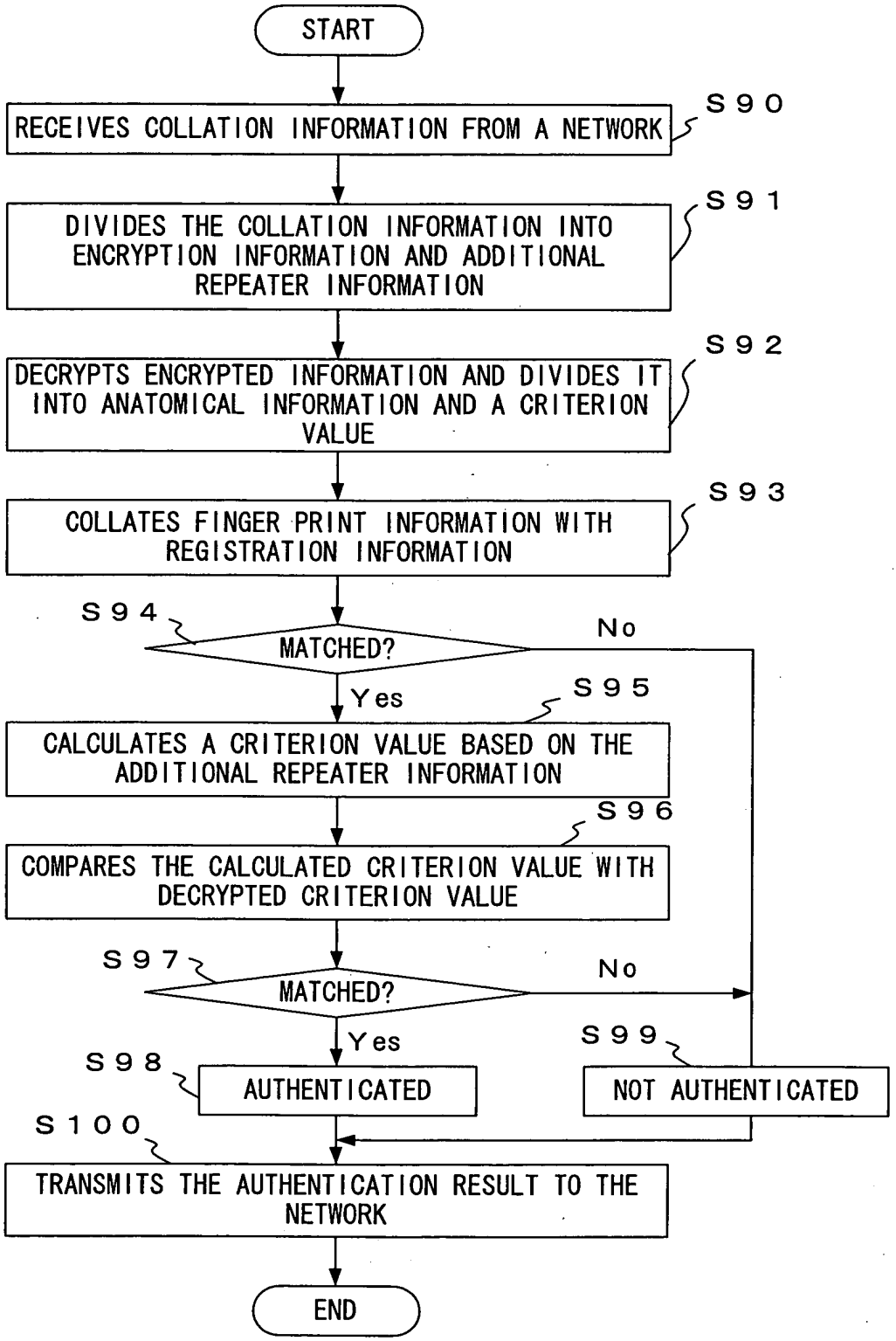

START
RECEIVES COLLATION INFORMATION FROM A NETWORK
S90
DIVIDES THE COLLATION INFORMATION INTO ENCRYPTION INFORMATION AND ADDITIONAL REPEATER INFORMATION
S91
DECRYPTS ENCRYPTED INFORMATION AND DIVIDES IT INTO ANATOMICAL INFORMATION AND A CRITERION VALUE
S92
COLLATES FINGER PRINT INFORMATION WITH REGISTRATION INFORMATION
S93
S94
MATCHED?
No
Yes
S95
CALCULATES A CRITERION VALUE BASED ON THE ADDITIONAL REPEATER INFORMATION
S96
COMPARES THE CALCULATED CRITERION VALUE WITH DECRYPTED CRITERION VALUE
S97
MATCHED?
No
Yes
S98
AUTHENTICATED
S99
NOT AUTHENTICATED
S100
TRANSMITS THE AUTHENTICATION RESULT TO THE NETWORK
END

FIG. 25

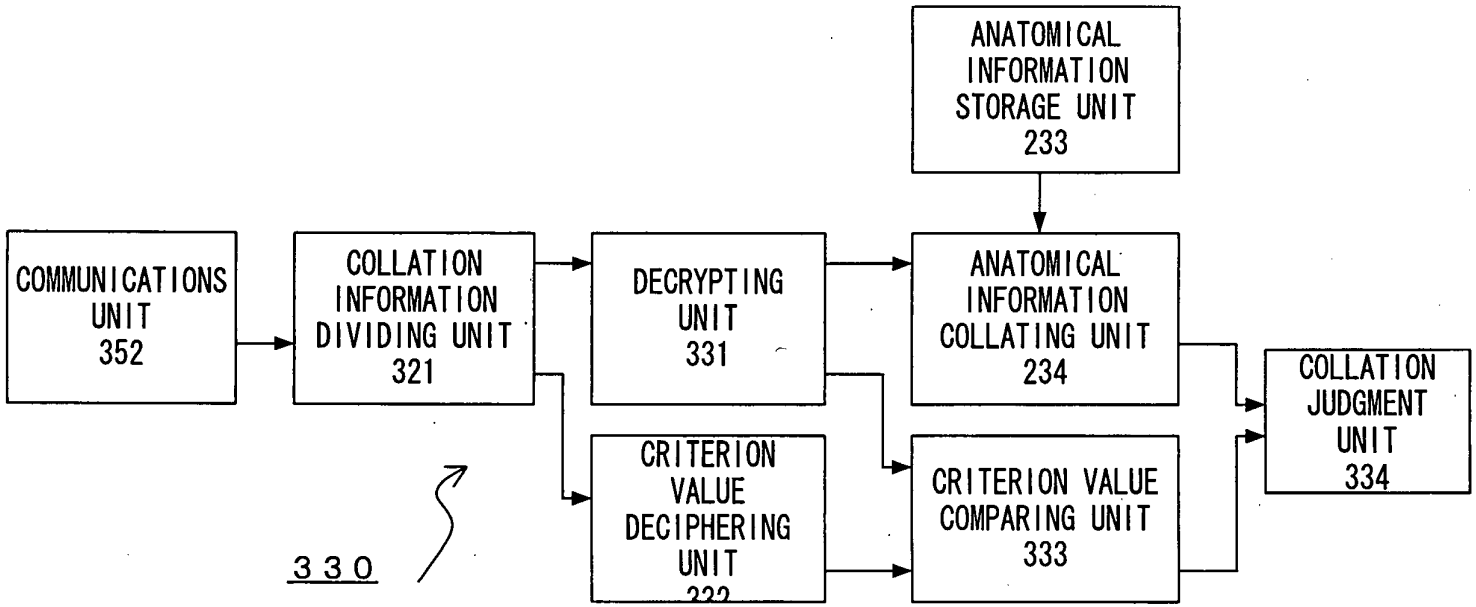


FIG. 26

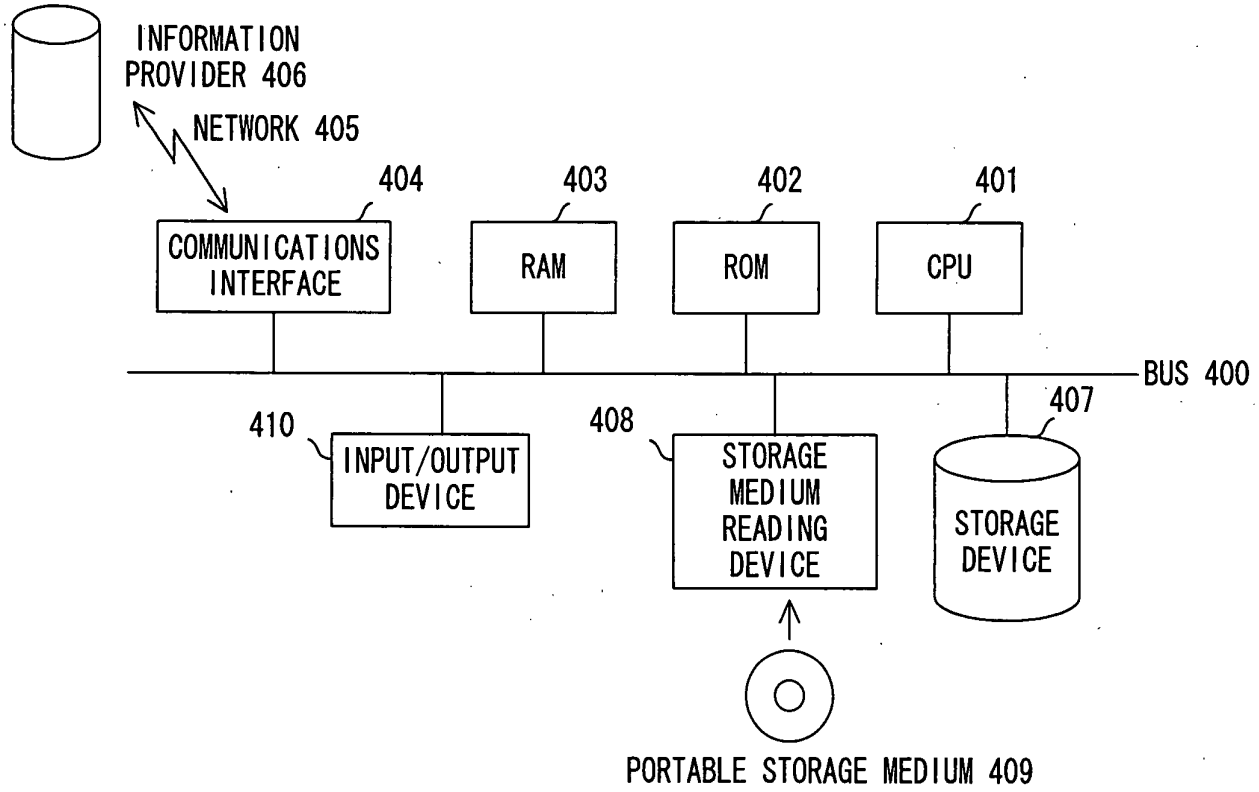

INFORMATION PROVIDER 406
NETWORK 405
404
403
402
401
COMMUNICATIONS INTERFACE
RAM
ROM
CPU
BUS 400
410
INPUT/OUTPUT DEVICE
408
STORAGE MEDIUM READING DEVICE
407
STORAGE DEVICE
PORTABLE STORAGE MEDIUM 409

FIG. 27